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ABSTRACT

When a decision was made to centralize microform collections at the University of Oklahoma's Bizzell Memorial Library, the author was asked to make recommendations to the library administration on organizing such a collection. After studying the relevant literature and the existing situation at the library, the author prepared a report covering (1) reasons for using microforms; (2) bibliographic control of microforms; (3) room, equipment, and staff; and (4) promoting the collection. Recommendations also cover policy considerations in regard to definitions, microform types, reduction ratios, formats, polarity, bibliographic integrity and conversion to microform from hard copy. A bibliography is included. (LS)

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MICROFORM CENTRALIZATION PROJECT:
A SURVEY OF CURRENT PRACTICE AND
POSSIBLE APPLICATION IN BIZZELL LIBRARY

A Report to the Director of Libraries
University of Oklahoma

Marvin C. Guilfoyle
Assistant History-Government-Geography Librarian

March 25, 1976

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U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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IR003 402

March 25, 1976

To: Dr. James Zink, Director of Libraries
Mr. James Alsip, Assistant Director of Libraries

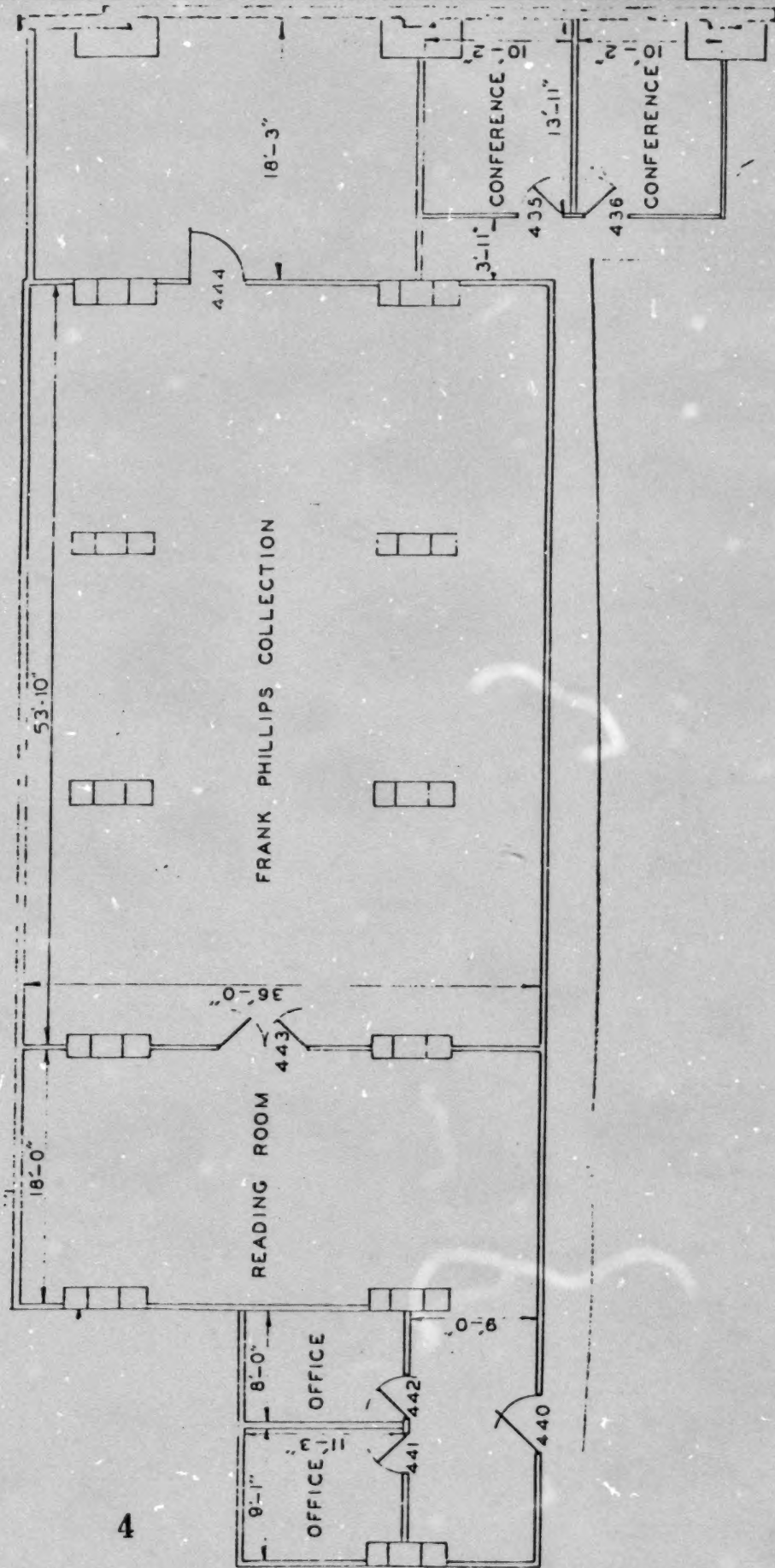
From: Marvin C. Guilfoyle, Assistant History-Government-
Geography Librarian

Subject: Report

This is a rather long report with a rather long title that was originally intended to be a series of memoranda concerning specific areas of the question being studied. This form has been chosen instead because I feel that there is more to be considered than any of us realized at the outset. It seemed prudent to record some of what I have learned in permanent form. The documentation includes some of the best recent literature on the subject.

Because the whole project will be a subject for discussion in the coming months, I have included in the Exhibits section a number of readings with which anyone concerned with the project should be familiar; numbers (E) 2,4 and 7-13 are highly recommended.

NEW MICROFORM AREA



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The first microform was produced in 1839, and the micrographics industry was born less than two decades later. Although the medium played a vital role in the Franco-Prussian War, and its potential for information storage was recognized at the time, microform was not "discovered" by the library world until about 1930 (S46 p. 16, 70-82 and S6, p. 349)*. Commercial use of microform (microfilm principally) grew rapidly, and World War II provided a great impetus for technical improvement and popular cognizance of the potential of this "new" technology (S30, pp. 5-6). The development of computer output microfilm (COM), and the establishment of large micropublishing programs such as ERIC and the U.S. Energy Research and Development Administration (ERDA) depository program by the Federal Government, and the data dissemination efforts of private companies such as Congressional Information Service and Xerox University Microfilms, have been key events which have now made the industry vital to anyone concerned with the collection, organization, storage, and transmission of information (S73, pp. 1-2.).

The University of Oklahoma's Bizzell Memorial Library has been a book-oriented collection. With no stated policy against the acquisition of microforms, the Library has simply purchased them only when a suitable hard copy was, for some

*For simplicity of citation, the Sources section has been numbered, and notes will refer to those numbers (S2, p. 1, etc.). "E" numbers refer to the Exhibits section which contains readings and documents (E 2, etc.).

reason, not readily available. By early 1975, the microform world had crept up on and infiltrated Bizzell Library; vast numbers of technical reports, documents, dissertations and periodicals in several microformats were stored in subject areas, branches, and special collections. The large majority of this material had not been subjected to the same degree of bibliographic control as would have been the case had the equivalent paper copy been acquired. The confused and scattered nature of the materials, the high failure rate of the reading equipment, and the realization that the micropublishing industry could no longer be ignored, led to the appointment of a committee to study the problem.

The Microforms Committee read, met, and discussed the issue. One member was sent to the First Annual Library Microform Conference (9-10 October 1975) in New York City for additional training. The Committee concluded:

1. Microform use in Bizzell Library was heavy.
2. The scattering of the materials throughout the main building was causing problems of location, use-instruction, equipment maintenance, and storage.
3. Microform use was going to increase despite any contrary acquisition policy because the micropublishing industry was greatly increasing its output.
4. It was necessary to change the present methods of storage, and utilization of these materials in order to better serve the students and faculty of the University of Oklahoma (El).

At the December, 1975 meeting of the Library Faculty, the Committee's report was read and adopted. The faculty, by its action, had therefore accepted the conclusions reached by

the Committee, and directed that the general collection of microforms held by the library should be centralized in an area expected to be vacated the next year. The area (the Phillips Collection) was to be administered by a professional librarian appointed by the Director of Libraries, and administrative details would be worked out between them. Final action on the designation of an administrator for the collection has not yet been made for a number of reasons, but the Director requested that the Assistant History-Government-Geography Librarian research the matter and report to him.

The following report is, therefore, the result of a very brief, intensive study of a problem which needed to be studied long ago. It is also the product of an individual--with all the potential good and bad that that implies. The research entailed reading the most recent writings available and also those most often cited in the literature regardless of their date of publication. Some information was solicited from institutions that had already dealt with the problem. The reading, however intensive, was selective--those pieces that seemed applicable to the problems of O.U.'s (University of Oklahoma) Bizzell Library were studied; less relevant ones were only scanned. This was not intended as a definitive report, and it isn't.

In order to proceed with the research, it was necessary to make certain assumptions:

1. The proposed microform area was, in fact, going to become vacant. (If this proves to be an erroneous assumption, what follows is fantasy.)
2. There would be sufficient funds made available to operate the area in a satisfactory manner.
3. The Library's administrators were willing to recognize the good and bad points of microforms and deal with them on the basis of their ability to strengthen the collection and not simply as a problem to be overcome.

Each of these assumptions caused some anxiety, but the last was most critical; if it were not true, the others wouldn't really matter. The reason for the concern was (and is) the need for positive leadership. Reading a microform is not as "natural" an act as reading a book, and a basic understanding of the hardware and software is essential for this leadership; a negative attitude would probably destroy any chance for the development of this understanding. Fortunately, during the course of the research, the questions have been answered in a positive manner.

1. DEVELOPMENT OF INEVITABILITY

The wheel may well be the most useful invention of mankind because it enables the world to move. The wheel has changed over the centuries until it is now far more efficient than ever before. The concrete presentation of information in written form may be the second most important invention of our species because it enables knowledge to be collected, organized, stored, and transmitted. Information collection, organization, storage, and transmission has also moved from primitive beginnings to an advanced state. Although some forms of transmission have virtually done away with the concrete copy, it is safe to conclude that printed materials will be useful to us for some time to come. The forms of this concrete copy have evolved from the clay tablet to the microform; the book, despite the predictions of some micro-publishers a few years ago, does seem destined to be around for awhile. Microforms will not, in the foreseeable future, displace paper altogether. They have, however, become a viable alternative to paper format in a number of cases.

Undoubtedly, poverty is the "best justification for going to microforms..." (S93, p. 22). If this is true, Bizzell Library has exceptional justification (S103, Table 3). Microforms save money on the costs of acquisitions, storage, mutilation, and binding (S40 and S15, p. 23). They directly cost money in terms of special equipment and trained personnel

necessary for their use; most of the equipment, however, can be used for an infinite number of titles, and since building costs and the price of paper are both rising astronomically, the eventual balance should be far on the side of the microform. One of the most critical considerations is that the amount of room in Bizzell Library is finite, but the amount of materials is not. With no hope of additional construction in the foreseeable future, conservation of space is absolutely essential--the space is priceless.

One of the problems in determining the cost-effectiveness of a firm microform program at the University of Oklahoma Library is the in-house bindery. According to the conventional wisdom, the O.U. bindery is binding at the phenomenally low figure of \$3.00 per unit. This figure is so low relative to costs reported in other studies (S47, p. 18-19), that it should be carefully documented. If it is correct, the University may be in violation of the spirit, at least, of the Emancipation Proclamation. Even if the figure is correct, one must add an average preparation cost of about \$2.75 per bound unit (S95, p. 18), making a periodical bound quarterly astonishingly expensive. Also, the time that the volume is unavailable for patron use is an unknown cost factor in terms of patron satisfaction. It is estimated that a total microfilm program for presently-received periodicals could save 30% annually in periodical binding costs

(S96, p. 4). The analysis of the O.U. situation done by Xerox University Microfilms (S96) should be carefully studied. No matter what the bias of this work, which was done with every hope of financial reward for the company, it is quite probably the best information available for use. An additional factor is that, while it can no longer be said that mutilation of microfilms does not take place (S36, p. 373), Central State University (Edmond, Oklahoma), which uses microforms heavily, has so little vandalism that statistics are not even kept (S40). Economically, microforms (periodicals especially) make sense.

Another consideration--besides newspapers, which practically cannot be kept in anything but microform--is the future direction of the micropublishing industry. The giants of the micropublishing field now believe that their future lies in out-of-print and rare materials, often massed in large organized collections (S53, pp. 76-77). If this is true (and if the publishers believe it, it will be), research libraries will have to deal with micro images to secure the materials their patrons demand. Even if a reprint is available, its price may make purchase out of the question. An interesting variant in the microworld, is the publication which is part paper copy and part microform. These hybrids are effective ways of disseminating papers presented at meetings while printing the proceedings of the meeting and the table of contents in paper form (S43, p. 19). The

Microforms Committee's judgment that the Library's collection of microforms would inevitably grow was correct.

1.1 Microform Policy Considerations

No one person should attempt to write a policy of this significance. Even a group effort can be faulty. Exhibit 2 (E2) is marred by several technical errors, but it is instructive of the type of document that is needed. Certain ideas appear regularly in the literature of the subject, and these should definitely be addressed in the necessary document; the document should be prepared by a committee appointed by the Director.

1.1.1 Definitions

Micropublishing is still in its infancy. All terms used should be defined to insure accuracy of intention. The following definitions, while not "official," are basic:

- | | |
|------------------|---|
| 1. Microcard: | An opaque microform. 7.5 x 12.5 cm. |
| 2. Microfiche: | A transparent microform in sheet rather than roll form. Positive or negative polarity. |
| 3. Microfilm: | A transparent microform in roll form. Usually 16 or 35mm in width. Positive or negative polarity. |
| 4. Microform: | A photoreduction of a document which cannot be read with the unaided eye. The generic term. |
| 5. Micro opaque: | The generic term for either microcard or microprint. |
| 6. Microprint: | An opaque microform larger than 7.5 x 12.5 cm. |

- 7. Microtext: Largely archaic term for micro opaques.
- 8. Reduction Ratio: The degree of photoreduction. 24x indicates that the image is 1/24 the size of the original.
- 9. Magnification or Blow-back ratio: The magnification power of the micro reader lens. A micro image with a 24x reduction ratio read on a reader equipped with a lens having a blow-back ratio of 24x would be seen at its original size (S73, pp. 4-5).
- 10. Silver Halide, Diazo, Vesicular: Types of micro transparency formulations. Each has its particular characteristics (E3). Only Silver Halide has established standards for archival permanence (S73, p. 4, S83 and S84).

1.1.2 Transparency Types and their Characteristics

There are currently three types of transparent micro-formulations ("films," for convenience). They are produced by different processes and have different attributes (S97, S73, p. 4, and S77, p. 23-25).

Silver Halide film is basically the same type as is used for common snapshot cameras. It is the dominant type used in archival work and for the master negatives from which copies of any of the three types are made. The development process for silver halide is relatively sophisticated and expensive, and the cost of the materials is higher than that for either of the other types. It is, however, if processed correctly and stored under exacting conditions, capable of lasting for hundreds of years. It is the only formulation for which there are

established standards for permanence. It can be scratched by careless handling, and it is susceptible to fungus attack.

Diazo film is processed with ultraviolet light, heat, and ammonia in daylight. It is the cheapest formulation to produce, is impervious to fungus attack, difficult to scratch or tear, but can fade quickly under seemingly normal conditions. It is used extensively in Computer Output Microfilm (COM) applications where longevity is not of great importance.

Vesicular film is processed by ultraviolet light and heat and is the medium film in price. It is unique in that it alone of the three types produces an image by reflecting light rather than absorbing it. It is relatively difficult to tear and is not susceptible to fungus attack. One brand (Kalvar) became notorious for chemically attacking the boxes and cabinets in which it was housed. No reports have surfaced of problems with other brands, and the Kalvar formula has since been changed.

At the present time only silver halide film has established standards for archival permanence. If the standards for processing and storage are met, the film will last for hundreds of years. However, there is some question as to whether the storage conditions specified exist in any normal library situation (S70, p. 256). The problem with Kalvar vesicular film has caused more than a little uneasiness within the library community about any non-silver film. Diazo, moreover, is known to fade in a very short time under some conditions.

The simple solution is not to buy any materials not on archival quality silver halide film. Unfortunately, a trend (economically inspired) has recently developed toward non-silver formulations, and their acquisition, while not recommended, will undoubtedly be unavoidable (S79, S81, S55, and S104). As an example, the ERIC reports are now available only on a Xidex-formulation vesicular microfiche (S55). It is necessary to remember that these non-silver formulations may still outlast the paper copy books on the Library's shelves (S70, p. 257). No one really knows.

1.1.3 Reduction Ratio

One of the growing pains of the micropublishing industry has been a multiplicity of reduction ratios. Although some special high-reduction sets exist, the situation has stabilized somewhat with the majority of library-type publications falling into the 18x to 24x reduction range. Some publishers vary the reduction ratio from frame to frame depending on the document being photographed. Nevertheless, most keep the resultant image compatible with readers having blow-back ratios in the 18x to 24x range. The current National Micrographics Association standard for microfiche is 24x arranged in a standard grid pattern (E3). Microfilm of newspapers is usually at the lower end of the 18x to 24x range. Certain business-oriented documents such as accounting figures, parts lists, etc., and most COM, is produced at

higher reduction ratios in the 42x to 48x range. It is likely, as COM use becomes more common in libraries, that readers with blow-back ratios capable of handling this higher reduction will have to be obtained. A reader with both 24x and 40+x blow-back lens would be prudent to consider. At present, any microform acquisition policy should take into consideration the necessary compatibility between hardware and software (S73, p. 7); a mistake could be expensive. O.U. obtained a very expensive set of microprint free because the State Library had no reader on which to use it.

1.1.4 Formats

There are now four microformats in common library use: microprint, microcard, microfiche, and microfilm (16mm and 35mm). Microprint and microcard are no longer in great favor. They are cheaper to produce than the transparencies, but the dim images of the readers have never been overcome. Even though the Library is now acquiring a printer for these micro opaques, they should be purchased only when no other format is available.

Microfilm has long been the mainstay of the archivist and, in the United States, of library microforms. The filming equipment is relatively simple as compared to the microfiche camera, and its variable length gives it a flexibility not enjoyed by microfiche, which has, at 24x, a fixed limit of 98 frames on each sheet.

Microfiche is currently the "trend" format of the micropublishing world. Although its capacity per sheet is fixed, it is cheap to reproduce, and lends itself especially well to documents of a complete nature, such as reports or monographs (S5, p. 173). In addition, the reading equipment for fiche is far less complex than that necessary for film (S53, pp. 55-65). Standardized eye-readable headers now make identification convenient. A problem with microfiche not a factor with roll film is the maintenance of file integrity; it is very easy to misfile a fiche (S47, p. 16); Central State's very successful open-stack microform program applies only to microfilm. The microfiche is retrieved by a staff member (S40).

It used to be said that, because of the problems of file integrity, long back files of serials should be acquired on film rather than fiche. The appearance of many serial titles in fiche in the last few years makes this axiom questionable. If current issues of a periodical are produced on fiche, and the back run is available in either form, consistency would seem to dictate the choice of fiche. If either format is available, the one delivered most frequently should be given preference so as to reduce the time one is dependent on unbound paper copies. If the choice is film, it should be remembered that, although most film readers will work with either 16mm or 35mm film, they are really made for the latter.

16mm should be reserved for special applications. A final consideration should be the indexing; if all else is equal give preference to that which has the most convenient indexing (S73, p. 10).

1.1.5 Polarity

In many cases microform transparencies can be selected as either positive polarity (black print on clear background) or negative polarity (white print on black background). The polarity of the format is important because certain readers and reader/printers work better with one than the other; Bizzell's present equipment seems to handle either. Although negative polarity masks dust and is thought, by some, to be less tiring on the eyes for long-term viewing, its principal characteristic for consideration here is that photographs appear in negative polarity much like the negatives from a snapshot. It is not a good choice for publications with illustrations. It is also an unfamiliar image. If one is trying to introduce the uninitiated to the use of microforms, the more natural image would seem a better choice; scholars familiar with the medium at all are most apt to be familiar with newspapers which are usually positive images (S53, p. 68). A general policy should be to automatically specify positive microform-choosing negative only when a particular instance makes negative either mandatory or preferable.

1.1.6 Bibliographic Integrity

For the sake of simplicity of control and minimal confusion, it should be deemed unwise to acquire on microform anything less than a complete bibliographic unit. Acquisition of portions of works, single issues of periodicals, or excerpts of manuscripts "oftentimes causes far greater expense than would have been incurred if the complete item had been acquired in the first place" (S4, p. 394). A very firm policy is necessary on this point as the potential for chaos is very great.

1.1.7 Conversion

Most of the preceding sections have been concerned with problems which most usually occur with new or continuing titles. A particular problem which must be addressed is the conversion of hard copy materials (usually serials) to microform. Microform is most readily accepted when it provides something which was not previously available. Situations will arise, however, when for some reason such as massive or frequent mutilation, infrequent use coupled with excessive consumption of space, or ordinary deterioration, that conversion becomes a reasonable action. Quite probably, the decision could be made simply by subjective evaluation. It is possible, however, to establish numerical criteria for this conversion; an apparently functional system already exists (E6).

One of the factors often cited for consideration when making a conversion decision based on conservation of space is the area taken up by readers and reader/printers (S47, p. 17). This is a very questionable line of reasoning as reading equipment can be used for an infinite number of titles, and the reading areas are usually not located in the main stack areas anyway. For example, converting the Congressional Record and its antecedents to microform would require only one large microfilm cabinet located in the microreading area and would free approximately one full range of shelving in the library's overcrowded J section.

Certain classes of materials are not good candidates for microform. Heavily used reference works (one could almost say all reference works), works which have a value in themselves (unless the original was to be retained with its use restricted), illustrated works, and (in general) books, should be left in their original form unless there is a compelling reason for their conversion (S47, p. 15). There are special applications, however, where use or conversion to a microform may be desirable (S39).

Section 1.1.6 advised against the acquisition of anything less than a complete bibliographic unit. In the case of a serial, this could reasonably be interpreted to mean one volume. It is questionable, however, whether it is wise to have an entire run of a periodical in one form with the exception of one volume. Although a firm policy would be difficult

to write because of a number of variables, consideration should be given to a complete conversion (if financially possible) if such a situation should arise; a serial title, or at least a minimum amount of one, should be part of the definition of a bibliographic unit.

1.2 Quality Control

It is essential that any commitment to microforms should include attention to the quality of the microforms purchased and received (S41, p. 5). An inspection should take place before new items are catalogued (S4, p. 394), and it should include checks on image quality, contrast, complete pagination, and proper labeling (S17, p. 556). One research library has found that, although most microforms received have been satisfactory, it is worthwhile to inspect them as such things as indexes and supplementary materials, although present in the hard copy, are sometimes omitted from the micro versions (S17, p. 556). And, of course, one must remember the micro image of a wandering cockroach received by the Oklahoma Department of Libraries documents collection; microforms should be inspected.

The point to start any quality control effort is before purchase; some inferior publications can be rejected out of hand and a better set found simply by checking reviews. For example, there are two microfilm versions of Wright's American Fiction, and one is far better organized than the other (S105,

p. 94). There is no point in purchasing a second-best edition in microform any more than one would pick out a second-best edition in paper copy. If quality were found to be equal, the format or indexing might dictate the choice.

1.3 Work Flow

Obviously pre-purchase evaluation of a large micro project implies that the microform manager (professional or classified) should be in the acquisition process at some point. His role should be that of a "coordinator of purchases" rather than as a true acquisitions librarian (S5, p. 172). This is especially necessary in the case of planned acquisitions of large, expensive sets. Possibly his only role would be to point out a weakness that could easily be mitigated by the librarians after receipt; Herstory is an excellent collection, but its less-than-perfect table of contents should be an inviting subject for someone looking for a project for publication (S110). The involvement of the microform manager in the acquisition process in some manner will be more important as the micropublishing industry expands its output. The question of quality control necessarily is concerned with the question of work flow. If the Acquisitions Department were to assume responsibility for post-receipt inspection, it would be necessary to provide equipment for all formats in that area. [A case for this approach can be made (S4, pp. 393-95).]

It is important that, as soon as possible, a quality control phase of the acquisition process be implemented. A

checklist of evaluative criteria should be developed from Allen B. Veaner's The Evaluation of Micropublications; a Handbook for Librarians (S82).

2. BIBLIOGRAPHIC CONTROL

By most accounts few libraries have established acceptable bibliographic control over their microform holdings (S63, p. 8); a 1972 survey of research libraries showed that only about 60% were giving full descriptive cataloging to microforms (S65, p. 279), and, while 90% filed entries into the public catalog, fully 40% listed major exceptions (S63, pp. 9-10). The situation is especially unfortunate in as much as the rationale for the library profession is that it is dedicated to the collection, organization, and dissemination of knowledge. Traditionally the card catalog has been seen as the statement of the library's holdings (S94, p. 530), and knowledge, after being collected and organized has been represented there. Whether the ideal of total control of the materials by the catalog was ever realized, is open to question; it is certainly not true any longer, and, although the future of the manually-maintained card catalog is not the point under consideration, the growth of the micropublishing industry will certainly fuel the discussion. The irony of the situation is that many of the microform materials not being entered into the card catalogs of the nation's libraries would have been had they been acquired in paper form; they would have been welcomed into that 3" x 5" world.

According to Dr. Felix Reichmann, three rules govern the actual operation of any control system:

1. Every item has to have some type of control.
2. Bibliographic control costs money.
3. Incorrect [or inconsistent] control is worthless (S65, p. 280).

The current question is whether Bizzell Library can establish unified, consistent control of some type over its microforms. The answer is yes. There is no way that conventional handling could deal with the many titles such as those of the American Periodical Series, Pollard and Redgrave, or the massive sets now on the market which claim to be almost self-contained libraries (S19, pp. 113-14), nor could any system now available to Bizzell control the ERIC or ERDA microfiles. However, with the exception of ERDA and ERIC, all of the microforms now owned by Bizzell could be uniformly controlled by author, title, and shelflist order with the aid of the program developed for the Current Subscriptions List. Reichmann's rules have to be accepted as gospel, the responsibility as necessity, and with that the effort can begin. The utility of a union list by author, title, and call number (if any) with their locations for all of the microform titles held by the University Libraries system, is beyond question. As the use of microforms increases, its value would increase as duplication of titles could easily be avoided.

A side benefit of this approach is that it would create a book catalog for the microform room. When Harvard formed a microform area several years ago, a card catalog was

begun when it was decided that there was insufficient information to permit a realistic decision as to whether or not one was really needed. Harvard acted because it was felt that it would be far easier to begin one with the dedication of the area than to try to cope with a retrospective effort sometime in the future (S4, p. 402). A book catalog of Bizzell's micro holdings, although certainly useful at present is not absolutely essential. However, it is already a retrospective effort, and the lessons of the Current Subscriptions List should illustrate the consequences of further delay.

2.1 Cataloging

It is possible to fully catalog all individually acquired microform monographs, serials, and newspapers. This should be established (or maintained) as standard policy. A microform, by definition, is only a photoreduction of some records; if the original work is catalogued, its microcopy merits cataloging also. The content of micro materials does not normally differ from book form publication, and hence should be considered an integral part of the library's resources (S58, p. 79).

Aside from the necessity of readers in the Cataloging Department, the greatest problem in cataloging comes with major micropublication projects such as the American Periodical Series. Whenever available, it should be firm policy that catalog card sets, if at all acceptable, should be purchased

at the same time as the materials; there is little virtue in having something if it cannot be readily identified. This type of information is usually sought in the card catalog. The information should, however, still be entered in the machine-readable data base.

2.2 Classification

Traditionally, classification in American libraries is by subject. There is, however, little utility in such an approach with microforms. If it is accepted that subject classification was designed to shelve materials on the same subject together for the convenience of the browsing patron, it is only logical that for a collection which does not lend itself to browsing, and whose physical dimensions are measured in feet rather than floors, it does not need to be classified by subject (S4, p. 395).

Older writings (and some modern ones) adhered slavishly to using the same classification system for microforms as for hard copy materials (S57 and S74). A modification of this approach is to classify by type of microformat and then by some portion of the main classification scheme such as the first two letters of the Library of Congress number that applies to the subject of the work (S91, p. 3).

The weakness of both of these approaches is apparent if one remembers the relationship between call number and shelf location, and that one of the strongest reasons for

dealing with microforms is the conservation of space. Space and effort are wasted with either of these approaches because space must be left around each of the letter breaks for expansion of that division, and at some point, the whole mass will have to be shifted. If additions were made only at one point--such as the last shelf--the preceding shelving could be packed tightly to maximum density and virtually no shifting would be necessary (S23, p. 9). For example, the U.S. Energy Research and Development Administration (ERDA) microfiche reports file much in the former manner in that their alphabetic call numbers reflect the corporate origin of the publication. Expansion room must be left after each agency designation; space that will in fact never really be filled. As an agency exhausts its expansion space, a massive shift must move all succeeding agencies (and their expansion space) to provide more room for the process to begin anew. The insertion of a new cabinet is a horrendous task. ERIC, in contrast, makes no attempt to group by author or subject; its files are numbered sequentially. Each drawer can be packed to maximum density, and no shifting is ever necessary. Cabinets are simply added at the end of the file. Browsing with either collection is impractical even with the eye-readable headers, and therefore, from the standpoint of efficient use of space and staff, ERIC is far superior to ERDA.

The sequential principle can be used effectively for the whole microform collection (E7). The most common objection

is that it was never done that way before (S22, p. 271). It is an extremely fast, effective way to promote bibliographic control, locate the greatest amount of material in the smallest amount of room, and requires the least attention from the staff (S5, p. 173). It is possible for classification of this type to be done by either the Cataloging Department, with catalogers "claiming" blocks of numbers, using them, and then "claiming" more (S61, p. 130), or even by non-professionals who simply furnish numbers on demand to the catalogers doing the descriptive cataloging (S5, P. 173).

[Discussion and examples of the concept and practice of sequential classification schemes appear in E7, E10, and E13.]

It would be relatively simple to simply use nothing but an accession number approach, but to make the most efficient use of space--and to make it possible to convert to cabinets at any point in the future--the currently recommended way to organize a microcollection is first by format--film, fiche, card, and print and then by sequence (S23, p. 9). A miscellaneous category is a useful idea for the one aperture card or other aberration which will inevitably appear (see S43, p. 19, for example). The system used by California State College is very promising (S5, pp. 173-74, also E13). As this example illustrates;

MPT (Format = microprint)
 1 (Accession or set number)
 321 (Number or reel, etc., within set)

shelving and retrieving is extremely simple as there are no decisions of precedence based on decimal or non-decimal or letter/number combinations. It is quite versatile as, for example, dissertations could either be assigned numbers as part of a single set, OU and non-OU works could be different sets (assuming they were both held in microform), or each could be treated as a monograph--each would be assigned a "set" number in the main sequence (line 2).

To minimize shifting and save even more space, serials and newspapers should occupy a separate section within each format (S23, p. 9). This would produce one area which would expand only at the end in sequential order, and another which, from time to time, would require shifting. The first section would have the highest density of storage possible.

It seems reasonable for such a classification scheme to be worked out for the new microform area, simply breaking with the past. There is little point in perpetuating a system which is no longer serving the need for which it was intended--the organization of the collection (S22, p. 271).

2.3 Marking of Materials

There is a considerable difference of opinion as to the necessity of physically marking the microforms themselves. Although film boxes need to be marked, and fiche jackets could be, the marking of the transparencies, because of the use of eye-readable headers is far less necessary than it was several

years ago (S23, p. 11). One speaker at the First Annual Library Microform Conference suggested the not uncommon practice of putting gummed labels on film leaders so that an inventory would be possible (S38). Considering the probability of such an inventory actually taking place in Bizzell, it is questionable whether the time spent could ever be justified.

3. ROOM, EQUIPMENT, STAFF

All of the considerations heretofore mentioned are basic to the proper establishment and operation of a centralized microform area. However, it is the room, the equipment, and the staff which will either realize or nullify the potential results of those basic steps.

The very brief report (E1) of the Microforms Committee left much unsaid; the feeling of the members was that many of the questions were really not compatible with pure democracy--technical, financial, and physical merits cannot be effectively evaluated by those not privy to the necessary specialized information. Having the research done by an individual, while permitting the use of hard-won expertise, does permit personal bias to play a great role in the final recommendations. While the full committee is no longer involved in the planning, the sentiments expressed in its meetings have been kept in mind to keep personal prejudices within reasonable bounds.

3.1 Stack Policy

There is no general consensus as to whether a microform stack area should be either open or closed to its patrons. According to Dr. Francis Spreitzer, libraries are quite evenly divided on this point, although he noted that of those having open stacks some were considering closing them while the reverse was not true (S38). His personal observation was that the patrons of his closed stack (and non-circulating) microform

area appreciated that it was one area that they could enter with virtual certainty that everything would be where it belonged and available for use (S38).

The Microforms Committee believed that a closed stack arrangement was essential even though it would necessitate additional staffing (S107. Also E14). It is recommended by some authorities that, even though a closed stack option is exercised, the stack area should be arranged so as to permit opening it if the need should arise (S90, p. 307). The double doors already present in the Phillips area make this possible.

3.2 The Reading Area

The microform reading room is one of the few places in the library where the patron is virtually forced to sit in a fixed position to use the materials. The room should be as comfortable as the rest of the library; at Bizzell, this should certainly be the minimum standard. All of the physical aspects of a micro reading area must be maintained in excellent condition; temperature, lighting, and cleanliness have to be monitored continuously (S41, p. 7 and S90, p. 308). This attentiveness provides a good environment for the patron and for the hardware and software. Carpeting should, if possible, be provided for the reading area; it is suggested for its accoustical properties (S41, p. 7), but it would also cut down on airborne dust which is the enemy of both microforms and readers.

The reading stations in an academic library need to be quite spacious in order that books, microforms, notes, etc., can be comfortably accommodated (S90, p. 306). The carrels presently in use (especially the smaller ones) are not adequate in this respect, and tables of some type will have to be placed adjacent to them.

Lighting is critical in a microform area; it should be low enough to permit good reader images but not so dark that note-taking or walking is difficult (S41, p. 4). The double electrical circuit present in the Phillips reading room is excellent; a dimmer switch should be provided (S41, p. 6). Of course when the room arrangement is finalized, additional electrical outlets will have to be installed.

3.3 Equipment

Xerox University Microfilms has estimated that a total commitment to periodicals on microfilm would require twenty-eight film readers and two reader/printers during the first five years of the program's operation (S96, p. 9). Central State's total microfilm system has fifty readers for only 11,000 students (S87), while University of Texas at Austin has only eight microfiche readers in their ERIC area (OU has ten), although their ERIC use is three times what it is here (their students do have to wait for a reader at times) (S106). The point is that there is no general accepted standard as to what amount of micro readers is necessary for good service.

At the present time the number of readers and reader/printers available for the microform room appears to be sufficient. The sufficiency will have to be confirmed or denied by experience. It is reasonable not to attempt to provide enough equipment for peak loads such as class assignments, but to provide an ample number of readers for "average" conditions.

The "down time" of equipment is related to the question of sufficiency of amount. The film readers (Information Design Systems' Model 201-1) now in use are, at present, clearly the best available (S45). They have proven to be reasonably durable, and during the warranty period the company has been extremely responsive and flexible in the matter of repairs. "Down time" has been minimal. It seems reasonable to continue to use this reader until a clearly superior model appears. The proposed purchase of three more Model 201-1's insures both quality and quantity in this area.

Bizzell Library has sufficient microfiche readers when they are working. Their unreliability and lack of quality indicates a need for attention. A possibility exists that the Xerox 1414 film readers can be successfully converted to fiche use. If not, thought should be given to the identification and purchase (over a period of time) of a number of high-quality fiche readers from a stable, established manufacturer. For the sake of maintenance and instruction, it would be better to attempt to standardize on one brand (and model) of reader

(S93, p. 24). At present there are three different brands in the ERIC room, and one operates in a significantly different manner than the other two. This can lead to patron frustration.

Development of an evaluation procedure or checklist for micro readers is beyond the scope of this report. Excellent suggestions do exist in the literature, however, and should be consulted in the near future (S41, pp. 33-37. Also reproduced in S109, pp. 206-24). For the present, no purchases should be made without at least itemizing the unacceptable characteristics of the present equipment and being certain that the readers being considered for purchase do not exhibit the same characteristics. For example, the Gakken readers now in use are repeatedly "down" because of the failure of the adhesive bond between the glass platen and an associated metal part. There seems no point in purchasing another machine with the same type of construction. Another problem with the present readers is that the platen area does not force the fiche to be positioned so that the guide grid and the fiche grid correspond; this makes it of little value to those who would need it most--the first-time users.

3.3.1 Maintenance and Service

Adequate maintenance of the reading equipment should be one of the highest priorities of any microform area because dirty, poorly maintained equipment is a signal to the patron that microforms are not a high priority library resource (S41,

p. 19). Daily routines must include cleaning of the machines and inspection of mechanical and electrical functions (S24, p. 170. Also E11). Any mechanical device will malfunction in time, and, while the routine maintenance and minor repairs can be done by the staff, the question of a service contract must be faced. The library community does not agree as to the value of service contracts (S17, p. 557, S87). One university has solved many of its maintenance problems by having an attendant load and unload the readers for its patrons (S5, p. 175).

The best approach for Bizzell Library would appear to be to try one year without any contracts, paying for repairs as needed, and keeping detailed records. At the end of the year the question should be carefully reviewed. A prudent step might be to contact purchasers of IDS readers and determine their general thoughts on the matter; it is presumed that the company would be willing to supply such a list. If one fiche reader becomes "standard," the same approach could be taken.

At some point in the future a micropublisher will offer a reader as part of a "package." If the microproject absolutely requires that particular reader, and the Library feels that it needs the project, then there can be little discussion about the matter. If, however, it is simply a "normal" reader, it should be evaluated just as if it were being purchased, with the additional consideration that OU is not running a

micro reader showroom--it would be unwise to have many different brands of equipment. Standardizing on one or two good brands of readers will pay off in the areas of maintenance and instruction--and the concept should not be compromised.

3.3.2 Readers for Branch Libraries

A Xerox representative once suggested that, if Bizzell Library had decided not to use their Model 1414 readers in the main library, they could be used in the branches. This is an extremely bad idea. Although this approach would, in effect provide "free" readers for the branches, a poor reader (in this case one that is both failure-prone and known to scratch the film) is a poor reader no matter where it is located and will perpetuate negative attitudes toward microforms. This particular reader is far less than state-of-the-art (S45), but the principle should be firmly established for any future consideration; branch libraries should receive only good equipment, equipment that will not generate negative impressions of the medium. The equipment should be (as far as is economically feasible) as good as that in the main library.

3.4 Storing the Microforms

Since the stack area of the microform room will be a closed area, purchase of a vast quantity of cabinets is not really necessary. Experience in the Government Documents Collection has proven that if an area is restricted to people

who know what they are doing, a great deal of liberty can be taken with the accepted norms of shelving materials. Most of the collection can be stored on standard library shelving in the containers in which it arrived or in acid-free archival boxes. Effort should be made not to have actual microform exposed to dirt. Microfiche, at least if there are more than a few units in a set, must be housed in proper cabinets. Continuation of present policy in this regard, and the purchase of Xerox Spacesaver cabinets for the New York Times should be sufficient. Some savings should be realized as there will no longer be any need for purchasing cabinets for dissertations on microfilm. A bit of ingenuity on demand should solve most of the storage problems.

3.5 Staffing

The Microforms Committee, while believing that a centralized closed stack arrangement was essential to the future of microform development at OU, was concerned about the required staffing that this decision implied (E14). Once such a decision is made by a library, it has, in fact, sanctioned the creation of another public service unit (S4, p. 399). It is recommended that a collection of any substantial size be provided with a full-time professional microforms librarian, and, considering the investment and the problems involved, the idea is not unreasonable (S5, p. 176, S50). Realistically, Bizzell Library will probably not have such a position in the

near future, and, at the present time, this is the case in most libraries; the microforms area is usually an administrative sub-unit of another department, and it doesn't really seem to matter what department (S63, p. 11). It is necessary, for effective management, to have the responsibility assigned to one individual (S25, p. 11. Also E12). The Microforms Committee's general feeling was that a Library Assistant III position would have to be established to provide a person to manage the daily operations of the area, and that this individual would report to the librarian designated as administrator. Additional student hours would be necessary to staff the area on evenings and weekends (E14).

The selection of the individuals for staffing the area is critical; in as much as the patron cannot browse, the communications function they perform is of vital importance to effective use of the collection (S21, p. 199. Also E8). Some mechanical aptitude is also required--especially on the part of the manager--because an inability to skillfully handle the equipment will embarrass the attendant, and the embarrassment will evolve into dislike--which will then be transmitted to the patron (S41, p. 23).

The various staff members must be trained (by the manager and the librarian) to perform most of the routine tasks of the area in the absence of the supervisors (S25, p. 12. Also E12). Well-prepared manuals for recurrent tasks

are of key importance (S25, p. 12). The less-sophisticated the attendants and the patrons, the greater the importance the manuals assume. The Committee decided that for the present, indexes would stay in the subject areas (E14), but some that are very closely related to the microforms may need to be kept with them. If this is the case, the staff members must be able to translate the citations sufficiently to retrieve the microform.

4. PROMOTION OF THE COLLECTION

Patron resistance to microforms is legendary, and it has been realized only relatively recently that use of the medium must be taught (S53, p. 71). Recent experiments have indicated that resistance can be modified if sufficient attention is given the problem (S73, pp. 23-26, and S7, pp. 488-91). As micropublishers move more and more toward providing that which is otherwise unavailable, use of microforms will intrude on the air space of even the most ardent academic troglodytes. However, at Bizzell Library a multitude of reasons make it paramount that the microform be used for a much wider scope of publications.

There is evidence that TV-generation students and scholars are much more receptive to microforms than were previous generations; in some cases they may even prefer them (S73, p. 23-26). The problem at the University of Oklahoma, from all indications, will not be with students. Older faculty members, in particular, may be very hard to sell.

Central State University, an acknowledged leader in this area, "sold" their faculty on the use of microforms by making their use as convenient as possible, and by stressing the economic advantages of the medium (S9, pp. 4-5). It may be that OU's faculty will readily accept this approach. Even if it proves to be more resistant than was CSU's, it will come around--the declining buying power of the book budget will eventually force the change.

4.1 Circulation

The establishment of a comfortable, adequately-staffed microform room should help considerably. In addition, augmentation of the small number of portable fiche readers for the use of faculty and graduate students should be considered. At the present time the general circulation of microfiche (or other microform) to undergraduates seems impractical. It would bring with it the implied responsibility of providing a large number of portable fiche readers for student use, and such funds as are available might better be reserved for additional equipment for the main library. If the concept of checking out fiche on any scale appears attractive, consideration should be given to the purchase of a fiche-to-fiche copier which would, in effect, produce disposable copies.

Microfilm is less apt to be checked out as there are no portable readers generally available at this time. The question will have to be faced at some point about checking out film to departments which have their own readers which are of a type that will scratch the film (this is another good reason for not putting inferior readers in other areas). One must accept the idea that microforms as well as books will be mishandled; it would be bad public relations to restrict circulation for this reason--unless it was found that one particular machine was seriously damaging the film.

A good approach to this problem would be, assuming one had the expertise and the time, to have the microforms librarian, as part of his educational effort, conspicuously offer his time for consultation in regard to departmental purchases of equipment.

4.2 Faculty Reading Room

Because of the layout of the Phillips Collection stack area, with the small room at the back which will probably not be needed for storage in the initial stages of development, a unique opportunity for an approach to the faculty exists. This area could be set aside as a faculty microreading area with good and unique equipment, comfortable furniture, and typewriters. Carpeting (if installed in the main reading area) and a coffee pot could also be added. A discretely placed door could be cut through to the main East Wing (History-Government Area); keys could be checked out on a temporary basis to faculty members who needed to work when the main micro area was closed--the door into the main area would be locked with only the materials immediately necessary for the professor's research left in the faculty area. This extra effort on the part of the library could be extremely rewarding in terms of the goodwill it would generate.

4.3 Deja Vu

As the recommended ways for promoting a micro collection are reviewed, one is struck by the similarities between

them and the techniques used to promote a documents collection: lectures, tours, newsletters, news stories, bibliographies, and guides to the collection are all part of the repertoire (S5, pp. 175-76. Also E13). Obviously, part-time attention will not be sufficient to do a thorough job, but a beginning can be made.

Absolutely essential to the success of strong microform commitment is the attitude of the library faculty and staff; libraries that have favorable responses to their microform programs usually are found to have enthusiastic librarians who have persuaded their patrons to give the medium a fair trial (S47, p. 20 and S47, p. 5). The attitude cannot be limited to the microform librarian and his staff; it must be shared (or at least not opposed) by the rest of the people in the library--led by the Director. The microform librarian's educational task must begin at home.

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EXHIBITS

THE UNIVERSITY OF OKLAHOMA INTEROFFICE COMMUNICATION

To Dr. James K. Zink Date 12/15/75
From Microforms Committee, Don Hurst Subject Report of the Committee
(Chair)

Microforms are now a fact of the library world; they are often an acceptable substitute for a paper copy of the same work, are being used as an alternative to binding, can provide access to otherwise unavailable rare works, and are now being used as a medium of original publication. Their use, even in Bizzell's book-oriented collection, is certain to increase. For this reason, and because of a belief of several faculty members that Bizzell's present microforms were not being handled in accordance with the latest accepted methods, a committee of Don Hurst (Chair), Janice Donnell, Shirley Pelley, Hiram Davis, and Marvin Guilfoyle. Guilfoyle was sent to the First Annual Microform Conference in New York (October 9-10, 1975) for further training.

The Committee has come to the following conclusions:

1. Microform use in Bizzell Library is heavy at the present time.
2. These materials are now dispersed throughout the main building causing problems of location, use-instruction, equipment maintenance, and storage.
3. Microform use will increase despite any contrary acquisition policy; the micropublishing industry is greatly increasing its output.
4. Bizzell must change its present methods of storage and utilization of these materials in order to better serve the students and faculty of the University.

The Committee, after a great deal of informal discussion, and two formal meetings, and drawing on the knowledge gained from the Library Microform Conference, recommends:

1. The general collection of microforms, including (but not limited to) newspapers, catalogued serials, catalogued monographs, etc., which are now decentralized throughout the main collection, should be centralized in one staffed area, administered by a professional librarian to be designated by the Director of Libraries.
2. The area now occupied by the Library Division of the Western History Collections, when vacated, should be used for this purpose.
3. Further administrative details should be worked out between the Director of Libraries and the librarian designated as the administrator of the microform collection.

The Microforms Committee submits this report and these recommendations in the hope that preliminary planning for what will be a considerable improvement in one aspect of the Library's services can begin in the near future.

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See <u>Library Resources & Technical Services</u> Vol 13 No 1 pp 79-85.	
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VESICULAR FILM AS A LIBRARY MICROFILM

The purpose of a public or institutional library is to make available to the largest number of people, the broadest spectrum of literary works possible. Since most libraries have a limited budget for acquisition of materials, it becomes very important to the librarian to achieve a high degree of cost effectiveness. One method of getting more for the library dollar is through the use of microfilm. Most libraries are already familiar with the cost and space savings that microfilm provides. These cost and space savings mean that the existing library can offer a larger collection for less money to the people it serves.

Until now, almost all microfilm used in libraries has been on silver halide print film. Silver film has enjoyed the exclusiveness over nonsilver films in the library market for a number of reasons. For a long period of time, silver film was the only film that possessed the long tonal range, quality and stability which was required for library storage. A set of processing and storage standards has been published which, when followed, produce films with archival qualities.

Today, however, there are some compelling reasons why librarians should consider vesicular print films for use in their library microfilm collection. The price of silver metal which is used in silver film has sky-rocketed over the past several years. This means that silver films are becoming more rapidly expensive than vesicular films. The price increase is a direct result of the scarcity of silver metal and is beginning to be a factor in the supply of available silver camera and duplicating films. In addition, the processing required for silver film produces a significant amount of waste chemicals which present disposal problems. This is another costly and time consuming process which adds to the expense of the microfilm you buy. Additionally, the highly touted "archival" characteristics of silver microfilm apply *only* to film stored under controlled environmental conditions and not used in an active file. It is apparent for these reasons that an alternative to silver film is highly desirable.

Vesicular microfilm has been known for over 40 years and has been used for information dissemination over the past 15 years. During this period a number of problems inherent in the first vesicular microfilms have been solved and Xidex

vesicular print films now provide an acceptable alternative to silver print film for use in libraries. The cost of unprocessed vesicular microfilm is now approximately 65% of that of silver microfilm and the pricing trend on vesicular microfilm is only slowly upward. Current Xidex vesicular microfilms have image resolution that is higher than that of the silver duplicating films available to micropublishers and also have the tonal scale necessary to faithfully reproduce photographic content. Some of the problem areas which may occur with silver film are nonexistent in vesicular film. These include the problems of residual hypo, water damage, fungus attack, fingerprint damage and, for silver films coated on acetate base, tear strength.

Former problems with vesicular film, such as emission of corrosive gases and reader image fading, are not present with Xidex print film. Our film is incapable of emitting hydrogen chloride (HCL) and therefore can cause no damage to filing cabinets or boxes. The thermal stability of our epoxy resin is such that we are able to easily meet ANSI specification #PH 5.1. Xidex film accepts a wider range of processing conditions and still achieves a thermally stable image. The current draft revision of ANSI #PH 1.43 also allows non-acid emitting vesicular film (such as Xidex) to be stored together with silver film. The ability of vesicular film to be processed strictly by the use of light and heat means that no pollutants are released into the environment.

We have attached a tabular comparison of film properties which we hope will allow you to compare the relative merits of silver duplicating and nonsilver films. Also, we are fully aware that the corrosion problem from some vesicular films in libraries in the past is one which has caused severe problems. A study which was done by an independent laboratory shows that our film does not emit any hydrochloric acid even at elevated temperatures.

Our intention in providing this information to you is to allow you to take advantage of some of the features of vesicular film which have been enjoyed by other segments of the microfilm community for many years. We feel that both the library community and Xidex will benefit as a result. If you have any requests for additional information regarding the use of vesicular film in your library, please contact us at the Xidex Corporation, 305 Soquel Way, Sunnyvale, Ca 94086.

THE UNIVERSITY OF OKLAHOMA INTEROFFICE COMMUNICATION

To Microforms Committee Date 12/10/75
From Marv & Don Subject Report Draft (for discussion)

Microforms are now a fact of the library world; they are often an acceptable substitute for a paper copy of the same work, are being used as an alternative to binding, can provide access to otherwise unavailable rare works, and are now being used as a medium of original publication. Their use, even in Bizzell's book-oriented collection is certain to increase. For this reason, and because of a belief of several faculty members that Bizzell's present microforms were not being handled in accordance with the latest accepted methods, a committee of Don Hurst (chair), Janice Donnell, Shirley Pelley, and Marvin Guilfoyle, was appointed to study the situation and make recommendations. Guilfoyle was also sent to the First Annual Microform Conference in New York City (October 9-10, 1975) for further training.

The Committee has come to the following conclusions:

1. Microform use in Bizzell Library is heavy at the present time.
2. These materials are now dispersed throughout the main building causing problems of location, use-instruction, equipment maintenance, and storage.
3. Microform use will increase despite any contrary acquisition policy; the micropublishing industry is greatly increasing its output.
4. Bizzell must change its present methods of storage and utilization of these materials in order to better serve the students and faculty of the University.

The Committee, after a great deal of informal discussion, and drawing on the knowledge gained at the Library Microform Conferences, proposes the following actions:

1. The general collection of microforms, including newspapers, catalogued serials, monographs, etc. should be centralized in one location with appropriate reading and duplicating equipment.
2. When vacated, the area now occupied by the Library Division of the Western History Collections should be used for this purpose.
3. The microform collection should be staffed for the same number of hours that the subject area offices are staffed.
4. A Library Assistant III should be employed full-time and be in operational charge of the area instructing patrons in microform use, operating duplicating equipment, repairing machines and film, and servicing the collection.

5. The library should fund whatever training is necessary to affect these functions.
6. The Library Assistant will report to a professional librarian, to be designated by the Director of Libraries, who will be in overall administrative charge of the area--however responsibility for daily operations will remain with the Library Assistant.
7. The Library Assistant should have the equivalent of one half-time student assistant to aid in evening and weekend staffing.
8. When the area is not staffed, it should remain open for unassisted student use, duplicating facilities excepted.
9. Indexes to microform collections will remain in their present location unless common sense dictates otherwise.
10. The professional librarian in charge will be responsible for the training of the Library Assistant, who, in turn, will train the student help.
11. Presently-owned equipment is sufficient for initial operation of the area, but the following actions should also be taken:
 1. Duplicating equipment should be moved to the area from Library Copying Service.
 2. As soon as financially possible, the most heavily-used microforms should be provided with cabinets specifically designed for them.
12. Policies, procedures, and staffing levels should be adjusted as experience warrants.

The Microforms Committee submits this report and these proposals in the hope that preliminary planning for what will be a considerable improvement in one aspect of the Library's services can begin in the near future.